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ABSTRACT

A methodology for developing a teaching effectiveness rating instrument is provided which elicits measures in terms decision makers believe important, avoids redundancy, includes items raters are able to rate (as perceived by decision makers), and includes concerned parties in the development of the instrument. Methodology consists of development and screening of an item pool, survey assessment of the items for importance and student ability-to-rate, and response analysis. Each of these steps is described in detail. The final step, development of the evaluation instrument, is examined from a number of approaches in item selection criteria: (1) importance only; (2) ability-to-rate only; (3) factor loadings only; (4) a combination of the three criteria equally; and (5) a combination of two or three of the criteria using a weighted system deemed appropriate. It is concluded that a rating instrument that is agreed upon by all as perfect will probably never be found. But, if evaluation of teaching effectiveness is to be carried out, the procedures described should help produce an acceptance and use of the results at least as well or better than any other procedure. (HJB)

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DEVELOPING A TEACHING EFFECTIVENESS ASSESSMENT INSTRUMENT

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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The evaluation of teaching effectiveness is of great interest to three groups of decision makers. First are administrators who are responsible for counseling faculty members and for evaluating them with respect to retention, tenure, and promotion. Second are the teaching faculty themselves whose purposes are to gain feedback on their teaching ability so that self-improvement can be facilitated. Third are the students who, for whatever reasons, seek information which will help them select instructors and courses.

It would be safe to assume that every instructor in every college and university is evaluated, at least informally, by his students, his colleagues, and the administration. In particular, personnel committees composed of colleagues and administrators consider the teaching effectiveness of faculty members when making personnel judgments. Sources of information used in these judgments generally include evaluations by department chairmen and deans, colleagues' opinions, scholarly research and publications, informal student opinion, grade distributions, course syllabi and exams, classroom visits, systematic student ratings, enrollments in elective courses they might teach, and many others (1:363).

When systematic ratings are used, students have the opportunity to formalize their reaction to faculty members by filling out rating forms. These forms are usually prepared either by an administration or faculty committee, though sometimes students develop faculty rating questionnaires extracurricularly.

The development of the rating form--its contents, format, and procedures for administration--is usually based on a literature survey, on instruments used and deemed successful at other schools, and on the personal opinion and

attitude toward the teaching process of the members of the drafting team. Since no standard nor commonly agreed-upon criteria of teaching effectiveness exist, there is obviously considerable room for variation and debate in arriving at the final contents of the instrument. And because of the lack of external criteria of teaching effectiveness, validation studies of a given instrument are seldom undertaken, or, if undertaken, are often not accepted by a least some of the various parties involved.

The literature on evaluating teaching effectiveness is large, and much of it was reviewed in the process of carrying out this study and is noted where appropriate below. One major thrust of this literature has been the determination of relationships between specific background, behavioral, or personality traits and teaching effectiveness. Considerable literature has also involved the statistical analysis of teacher ratings in hopes of devising some empirically based teaching effectiveness criteria. Relatively little attention, however, has been devoted to the process of building instruments, and especially to the development of a pool of items which might be used in various combinations (predetermined by analysis) to meet the needs of different decision makers.

Objectives of This Study

This study presents a methodology for developing a teaching effectiveness rating instrument which will:

1. Provide measures of teaching effectiveness to various decision makers in terms of the dimensions each believes important.

2. Avoid redundant items in the instrument--i.e., those which measure collinear dimensions of teaching effectiveness.

3. Include items which the raters are sufficiently able to rate, as

perceived from the standpoint of the decision makers in question.

4. Include the concerned parties sufficiently in the development of the instrument so that they will be more open to accepting the results.

Because there are different reasons for evaluating teaching effectiveness, there are most likely corresponding differences in the dimensions of teaching effectiveness deemed important by decision makers, those concerned with the various reasons. For example, administrators desire evaluations as a basis for making personnel decisions, while faculty's interests in evaluations encompass self-diagnosis reasons. Perry established that criterion behaviors of teaching effectiveness varied in importance among faculty, students, and alumni at Toledo University (23). Students' assessment of the importance of various traits associated with teaching effectiveness have been subject to considerable study, and the findings suggest that the importance attached to any trait varies from one school to another (24,25), and between undergraduates and graduate students (12). These and many other supporting findings argue strongly for tailoring the evaluation instrument to the particular situation in question--namely, the school and the decision-makers who will use the information--rather than for finding an instrument which has universal applicability in the absence of universally accepted criteria of teaching effectiveness.

Redundancies in the instrument can be detected statistically as well as judgmentally. If redundancies exist, they can bias the evaluation results, serving as a type of "halo effect" giving disproportionate weight to the redundant items. Redundancies can, of course, be detected and eliminated after the instrument is administered and the findings are collected, but at that point it is difficult to ascertain whether items generating the same response patternare redundant rather than independent but correlated for the instance under study. A better approach is to eliminate items perceived

inherently redundant by the decision makers involved prior to the composition of the final instrument. Factor analysis, which has been applied many times in evaluation studies (13, 14, 29, 30), is one statistical approach which was applied in this study as well. Another technique for detecting redundancy which is employed here and which relies more on judgmental analysis is the Q-sort.

Empirical studies of the ability of students to rate faculty were not found in the literature search, though some early studies have been reported which correlate or compare the ratings of students with ratings by administrators to determine agreement between these groups of raters (7, 18, 19). Whether students are capable judges of teaching effectiveness is, in the absence of convincing empirical evidence, open to debate (4, 6, 29). A negative view on this issue is a strong basis for arguing against carrying out evaluations or for paying attention to their results. Thus, one way to improve the acceptability of such evaluations is to include items which the decision maker judges to be amenable to valid student rating.

The end result of applying this methodology presented below is a set of items which can be assembled in various combinations into evaluation instruments to reflect whatever criteria the decision maker wishes to apply. Other findings of interest, such as a comparison among decision makers on their ratings of the importance of various items and on students' ability to rate each of these items, will be noted later.

The Methodology

The methodology, which was developed and applied in the School of Business Administration, San Diego State University, consists of five steps as follows:

1. Development of an item pool.

2. Screening of the item pool.

3. Survey assessment of the screened items for importance and for student ability to rate.

4. Response analysis.

5. Development of the evaluation instrument options.

Step 1. Development of an Item Pool

Two methods were employed in this study to develop an item pool, including a search of relevant literature and exploratory interviews with students, faculty, and administrators in the institution under study.

Numerous published studies have attempted to identify criteria of effective teaching. Table 1 summarizes the criteria specified in 21 selected research studies--Barr (2), Breed (3), Bridges and others (5), Bryan (7), Charters and Waples (8), deBruin (9), Drayer (10), Gadzella (11), Harvey and Barker (15), Hoffman (16), Kilgo (17), Knight (18), McDaniel and Ravitz (20), Musella and Rusch (21), Paulsen (22), Pogue (24), Quick and Wolfe (25), Reed (26), Riley and others (27), Ryans (28), and Stalnaker and Remmers (31). These studies were conducted between 1922 and 1971 and represent only a small number of those published. The criteria listed are typical, however, and in many instances are repeated in other studies not included on the table.

Two exploratory interview studies were done. The first was conducted with selected faculty members and administrators. The second consisted of an open-ended questionnaire which was administered in person to groups of undergraduate and graduate business majors.

The faculty and administrator exploratory interviews were guided by questions such as the following:

1. If there were an ideal rating instrument for students to evaluate

faculty, what uses would be made of the data gathered?

2. What characteristics of teaching should be evaluated?

3. Which characteristics are most important?

4. How well are students able to rate their professors?

5. What means other than student ratings can be used to evaluate teaching?

The students were asked to respond to the following:

1. What are the purposes of rating faculty by students?

2. What do students want to know from ratings given a professor by former students?

3. What are the characteristics of ideal professors?

4. What are the characteristics of poor professors?

Questions addressed to faculty members and administrators, with corresponding responses, are presented in summary form in Tables 2 and 3. A summary of the information collected from students is presented in Table 4. The decision rule employed regarding the number of respondents desired in these exploratory studies was the following: When there is nothing new being found, stop interviewing. As a result, four administrators, ten faculty, and sixty students were questioned in these exploratory phases. These interviews, plus the literature search, produced a pool of 82 distinguishable items.

Step 2. Screening of the Item Pool

The screening step is essentially one of reducing the candidate items in number by eliminating items which are obviously redundant, ambiguous, and of least importance from the viewpoint of all decision makers involved. To accomplish this screening, each of the 82 items was printed on a 2-inch by 2-inch card. The cards were then combined into a Q-sort deck. The Q-sort was administered to a sample of students and faculty members to determine

(1) what general category each item is perceived to fit into when evaluating teaching effectiveness, and (2) which items within each category are perceived as being most important, moderately important, and least important.

Specifically, the first Q-sort procedure involved respondents placing each item into one of six categories:

1. Attitude toward students
2. Presentation
3. Personal attributes
4. Class atmosphere
5. Course mechanics
6. Attitude toward the subject

Category labels were arrived at through reference to previous studies reported in the literature. For those items not clearly perceived as fitting into one of these classifications, a miscellaneous "Other" category was used.

Subsequent to this initial sort, respondents were instructed to sort the items within each category into three importance levels: those of most importance, of moderate importance, and of least importance. Furthermore, respondents were asked to distribute these items so that an equal number was contained at each level. If the total number of items was not exactly divisible by three, the extras (one or two at the most) were to be placed in the middle, or "moderate importance," level. For example, if a sorter initially sorted 10 items into the category titled "Presentation," he would then have to rate three of the items as most important, four as moderately important, and three at the least important level.

The decision rule operating during this phase of the study regarding respondent number was the following: When a sufficient number of Q-sorts have been processed and analyzed so that each item is consistently being

grouped into a particular category, or when it is evident that an item is being placed in a variety of categories and will not group specifically, Q-sorts will cease.

Because the survey assessment step in the methodology is designed to explore in depth the importance of each characteristic, it is not necessary that item importance be defined precisely or consistently from the Q-sort findings. However, the decision as to whether an item was tested in the survey step was influenced in this study by a consensus of opinion evidenced in the Q-sort indicating that a characteristic was perceived as being "most important" by a majority of the sorters. Many of the characteristics were not included on the questionnaire because they had been perceived as being "least" or "moderate" in importance by a majority of the Q-sorters.

Table 5 shows an example of the results of this two-stage Q-sort. Of the 82 characteristics sorted, 61 did cluster within one of the categories. The remaining 21 exhibited a scattered or bimodal pattern.

Step 3. Survey Assessment for Importance and Ability to Rate

The purposes of the survey were to determine the perceived degree of importance each characteristic has in evaluating teaching, and to determine the perceived ability of students to rate each characteristic accurately. The items for the questionnaire were selected according to these criteria:

1. Use as few items as possible to avoid boredom or a halo effect.

2. Use items which were clearly defined by category grouping and of most importance to a majority of the Q-sorters.

3. Use items which were apparently vague or ambiguous in that they were not placed in a common category by a majority of the sorters, but were regarded as "most important," so that their position could be determined

relative to other characteristics which had been more clearly categorized.

4. Use items which were identified as desirable in evaluating teaching effectiveness by all three potential users of the eventually resulting evaluations: administrators, faculty, and students.

A copy of the faculty/administrator questionnaire used in this study is shown in Table 6. The student questionnaire was the same except classification information asked of students included age, sex, GPA, major, and class level. The purpose of the questionnaire and instructions on the desired method of completion are printed at the top of the questionnaire and were explained verbally to the respondents. In an attempt to avoid one set of answers, those on importance, biasing the responses on ability to rate, each respondent was asked to cover the left side answers when responding to the right side scales.

A seven-point scale was used for rating the items so that the resulting array of answers would contain enough variability to provide sensitivity in the statistical tests. Since the major concern was to identify relative moreso than absolute levels of importance and students' ability to rate, this methodology was considered sufficiently valid.

The remaining information requested was used to subdivide respondents into separate categories for analysis. The administrative population of 9 individuals responded to the questionnaire, as did a representative sample of 60% of the faculty and over 350 students.

Step 4. Response Analysis

Statistical analyses used to rank order the variables on importance and on students' ability to rate involved the mean and standard deviation for each variable from the major groups and subgroups of respondents. Rankings were

derived from mean scores. Given a tie, the variable having the smallest standard deviation (i.e., the least variance in opinion among respondents) was ranked higher.

Table 7 shows the resulting rankings on the importance criterion from the three major groups studied. However, because these results illustrate only relative rankings across the groups, a t test was performed to determine differences which were significant at the 0.05 level between mean responses of administrators and faculty, administrators and students, and faculty and students. Table 8 shows the results of these t tests. Table 9 gives the resulting rankings on the students' ability to rate criterion, and Table 10 shows the results of t tests on the absolute mean values for those items which were rated significantly different between groups.[1]

Kendall coefficients of concordance were computed for the major respondent groups of faculty, administrators, and students to test the degree of agreement among these groups on importance and students' ability to rate rankings of each questionnaire item. The W scores or coefficients were 0.73 for importance and 0.82 for students' ability to rate ($p < .05$), indicating a rather strong degree of agreement among these three groups of judges.

In an attempt to check the reliability of the Q-sorts done in step 2, two factor analyses were carried out, one for the student group data and the other for faculty and administrators combined group data. In both cases, only the importance ratings were factor analyzed. The purposes of these factor

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[1]Similar analyses were done for subcategories of respondents--e.g., for faculty by department affiliation, by rank, by years of teaching experience, by preference for undergraduate vs. graduate teaching, by year of last academic degree, and by perceived usefulness of faculty ratings. Breakdowns for students included comparisons by academic major, by sex, by class level, by grade point average, and by age. Anyone desiring these breakdowns should contact the authors.

analyses were (1) to determine how the variables grouped into factors, (2) to determine whether these factor groupings resembled the groupings resulting from the Q-sorts, and (3) to obtain factor loadings which could be used in step 5.

A comparison of the Q-sort results with the results of these factor analyses is given in Table 11. The factor groupings were easily matched with the Q-sort categories, although there were some exceptions. For example, the faculty/administrator factor analysis produced an eighth factor (with an eigenvalue>1) with four items that had large factor loadings. Every item from the questionnaire was included in a factor grouping, the one in which the item's loading was the highest.

Step 5. Development of the Evaluation Instrument

A number of alternative approaches can now be identified which can produce an evaluation instrument. Five will be described briefly:

1. Select items based on the importance criterion only.
2. Select items based on the ability to rate criterion only.
3. Select items based on the factor loadings only.
4. Select items based equally on the above three criteria.
5. Select items based on two or three of these criteria, with whatever weighting system is deemed appropriate.

Use of importance criterion only is based on the rationale that items selected should reflect what the decision makers believe important in assessing teaching effectiveness; otherwise evaluation results might be discarded as being irrelevant. Nine items were found to be ranked in the top ten in importance in common by at least two of the respondent groups (ten is arbitrarily chosen, and some other number could be used if desired). Another nine items fell in

the top ten rankings of importance by each of the respondent groups alone. Table 12 presents these results. If the evaluation instrument were to serve all these groups, these 18 items seem appropriate for inclusion on the final evaluation instrument, though more of less could be chosen depending on how long or short a list was desired. If the ratings were intended for use by only one of the decision makers, such as students, then those items ranked most important by students should comprise the instrument.

The other four approaches are carried out essentially in the same way. Thus, use of the ability to rate criterion only is based on the rationale that students' ratings of any other items would be invalid. Therefore, the top ten (or any desired number) items in terms of students' ability to rate should be included on the instrument.

The factor loadings criterion is based on the rationale that those items should be used which represent underlying dimensions (factors) of the phenomenon studied, and items which are statistically redundant or which are not strongly related to these underlying dimensions should be excluded. Thus, those items which had the largest factor loadings in each of the factors produced should be included in the rating instrument.

An equal combination of the three criteria of importance, students' ability to rate, and factor loadings can be used if no strong argument can be accepted for any one of these three criteria alone.

Likewise, an unequally weighted combination of two or three of these criteria can be used, depending on the wishes of the decision maker group(s) which will be using the results. Many such combinations are possible, but one should be determined in advance of the tabulation of the data in this step to avoid developing a weighting scheme in light of the findings rather than in light of what is believed to reflect proper ratings of teaching effectiveness.

Conclusion

Various approaches to devising a rating instrument have been described in this study. Each approach takes into consideration one or more of the criteria of importance of the items, perceived ability of students to rate the items, and factor loadings of each item in a statistical factor analysis.

A rating instrument which is agreed upon by all as "perfect" will probably never be found. But if evaluation of teaching effectiveness is to be carried out, the procedures described here should help produce an acceptance and use of the results at least as well or better than any other procedure.

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TABLE 1

CRITERIA OF EFFECTIVE TEACHING AS DEFINED IN 21 SELECTED RESEARCH STUDIES

Characteristic	Frequency of Mention in 21 Studies[a]
Communication skills--interprets abstract ideas and theories clearly	17
Attitudes toward students which are favorable	17
Knowledge of the subject	14
Good organization of the subject matter and course	13
Enthusiastic about the subject	12
Fair in examinations and grading	11
Willing to experiment--flexible	9
Encourages students to think for themselves	8
Pleasant personality or personal appearance	8
Interesting as a lecturer--good speaking ability	7
Instructor as a "worthwhile" human being	7
Respects student opinion and is tolerant to student disagreement	6
Researcher--scholarship activities	5
Self-controlled, cooperative, patient	5
Effective use of questions in class discussions	5
Has a variety of interests	5
Gives clear assignments	5
Provides useful feedback on student progress	4
Ability to stimulate or broaden student interest	4
Is appreciative of student effort	4
Encourages open communication	3
Sense of humor	3
Does not discriminate	3
Provides a relaxed classroom atmosphere	3
Motivates students to do their best work	3
Self-reliant and confident	3
Anticipates individual needs	3
Recognizes his own limitations and mistakes	3
Has good classroom control	2
Amount of student learning	2
Interested in and enjoys teaching	2
Supports ideas with examples, comparisons, and facts	2
Helper not a dictator--willing to help student in and out of class	2
Uses a wealth of commentarial statements	1
Has a knowledge of educational objectives	1
Dependable, healthy, honest, prompt	1
Involves students in course planning	1
Is a professional teacher, never stops learning himself.	1
Gives personal attention to student work	1
Believes students respect him as an individual	1

[a]These 21 studies are identified in the text.

TABLE 2

SUMMARY OF FINDINGS FOR EXPLORATORY STUDY USING FACULTY MEMBERS AS RESPONDENTS

Purposes of Student Evaluations

Self-diagnosis
Personnel decisions
To look at peers and see if they fit into pre-conceived prejudices
Faculty members already know what perfection in teaching is; there is not a need to walk on water
To better understand the characteristics of students

Categories to be Evaluated

Fairness
Organization
Knowledge of the subject
Communication
Course content
Conceptual integration
Stimulation and motivation
Relatedness of readings
Reactions to work assignments
Did something of value happen?

Items Considered Most Important

Is equal time given to both sides of an issue?
Fairness in testing and grading
Helpfulness of the learning experience

Students' Capabilities as Raters

Yes--but they cannot evaluate knowledge of the subject or currentness of information presented in class
No--the longer one lives the less one knows about evaluation.

Minimization of Confounding Variables

Correlate student interest in the subject with the ratings given.
Assume they randomize and cancel out.
Do not consider personality trait characteristics.

Other Means Which Could be Used to Evaluate Teaching Effectiveness

Informal student opinion
Alumni opinion
Have another faculty member in your area of specialty grade and give exams.

Methods Presently Being Used

Listen to the students
Look at self
Check with colleagues
Read pedagogical literature

Other Comments on Student Evaluations

When you expose incompetence, you cannot expect to be thanked.
Written comments by students when they rate characteristics should be more abundant and in greater detail on each question.
No one will ever agree on the criteria.

TABLE 3

SUMMARY OF FINDINGS FOR EXPLORATORY STUDY USING ADMINISTRATORS AS RESPONDENTS

Purposes of Student Evaluations

Personnel decision making and counseling

Categories to be Evaluated

Organization
Communication skills
Did the students understand the objectives of the course?
Course mechanics
How helpful is the teacher to the student in the learning process?
Openness of the teacher to discussion with students in and out of class
Did something of value happen?

Items Considered Most Important

Helpfulness of the professor
Clearly stated goals and objectives
Does the student think anything has happened in the learning process?

Students' Capabilities as Raters

Not totally--cannot judge if material is relevant or important or if the professor has a broad knowledge of the subject; can evaluate his own perceptions of the professor's competence in his field.

Minimization of Confounding Variables

Look at the nature and orientation of the course
Assume the variables will cancel out. (If a student thinks a professor is unfair, then to him the professor is unfair; evaluation cannot be anything but subjective in nature.)

Other Means Which Could be Used to Evaluate Teaching Effectiveness

Review the text used, exams given, and other materials
Evaluate performance of students in subsequent courses
Ask the faculty member to tell you what the course is all about

Methods Presently Being Employed

Informal student opinion
Opinions as expressed by colleagues

Other Comments on Student Evaluations

Items which deal with personality or personal mannerisms should not be included in an evaluation instrument.

TABLE 4

SUMMARY OF FINDINGS FROM STUDENT EXPLORATORY STUDY

	Frequency of Mention Gr.	Sen	Jun	Sop	Fr.	Total
Purposes of Student Evaluations						
Feedback for the professor	7	3	13	7	0	32
Student warning system	10	1	4	3	0	18
Administrative use	4	1	2	3	1	11
No idea--apparently nothing			1			1
Because someone ask me to do it	1					1
Information About a Professor Desired by Students Prior to Taking a Course of Study						
Ability to communicate Knowledge apparent Clarity of explanations Inspires confidence of students Stays on the subject Has a good speaking ability Interesting as a lecturer	10	3	18	5	0	36
Amount of work that is expected Term papers, number required and type Reading load Homework, busy/applicable Relevance of work assigned	14	4	8	6	0	32
Grading Practices Easy/Hard What criteria are used, what is taught or what was known before taking the class.	7	4	12	5	1	29
Exams Difficulty Type Frequency Amount of time to complete Relevance to the course Percent from the text and lecture	3	2	4	3	0	12

	Frequency of Mention Gr.	Sen	Jun	Sop	Fr.	Total
Information About a Professor Desired by Students Prior to Taking a Course of Study						
Coverage of material Areas of interest to the professor What is stressed Text or bibliography used	5	1	3	0	1	10
Attitude toward teaching and students Willingness to help Availability out of class Impartiality Interest in students	4	0	1	4	0	9
Course organization Objectives Structure, degree of Flexibility in use of outlines	4	0	4	1	0	9
Personality or temperament Easy/hard to get along with Political or social attitudes	2	2	2	1	1	8
Teaching techniques Types of approaches used Amount of discussion Demand of participation by students	2	2	2	1	0	7
Ability to motivate students Overall score of teaching effectiveness Did you learn something in the class	3	0	1	1	0	5
Characteristics of the Ideal Professor						
Is interested in students Helps in and out of the classroom Understands students and likes them	5	3	3	6	0	29
Able to communicate effectively	9	2	8	4	0	23
Has a good knowledge of the subject	12	1	4	3	0	20
Is a fair and impartial grader Gives students adequate feedback	7	4	5	1	0	18

TABLE 4 (Continued)

	Frequency of Mention Gr.	Sen	Jun	Sop	Fr.	Total
Characteristics of the Ideal Professor						
Interesting as a lecturer Arouses student interest	4	1	9	2	0	16
Up-to-date in his field Material presented is relevant	8	0	5	1	0	14
Listens to student opinion Has open communication lines in and out of the classroom	8	3	2	1	0	14
Has a sense of humor	3	1	5	2	0	11
Makes practical assignments and presents practical material	8	1	1	1	0	11
Wants to teach and is interested in the course himself	3	0	5	1	0	9
Course is well organized Designs the course for the class Is prepared yet flexible	5	1	3	0	0	9
Has self-confidence Admits when he is wrong	3	1	0	1	0	6
Class atmosphere is such that you want to come to class	2	0	2	0	0	4
Tests are fair (no surprises)	0	0	2	1	0	3
Has a good speaking voice	0	0	2	0	0	2
Motivates students to do their best work	1	0	0	0	0	1
Has good class control	0	1	0	0	0	1
Works in the community and identifies with what is happening in it	1	0	0	0	0	1
Characteristics of the Worst Professor						
Boring as a lecturer Confusing or at too high or low a level	14	6	18	6	0	44

	Frequency of Mention Gr.	Sen	Jun	Sop	Fr.	Total
Characteristics of the Worst Professor						
Not well versed in his field Material is out of date	10	1	4	3	0	19
Uninterested in students and unwilling to help Taught the course not the students	6	2	2	6	1	17
Not open to communication or interaction	6	2	5	3	0	16
Too demanding in workload Gives too much busy work	2	3	5	2	0	12
Unpleasant personal attributes (bad breath, clumsy, ugly, lazy, senile, sickly, absent minded)	6	0	3	0	0	9
Not interested in the course himself	2	3	3	1	0	9
Class is disorganized or unstructured	8	1	0	0	0	9
Aloof - Expresses a God-like attitude	4	0	2	0	1	7
Unreasonable in his grading Too easy or too hard	1	0	3	2	0	6
Partial to certain students Bigoted	2	1	2	0	1	6
No sense of humor	0	1	3	1	0	6
Feedback is inadequate Tests are "lousy"	1	0	3	1	0	5
Too concerned with mandatory class attendance	1	0	2	0	0	3
Ridicules those who disagree	1	0	1	1	0	3
Uses student presentations for fundamental concepts	2	0	0	0	0	2
Lacks knowledge or confidence in what he presents	1	0	0	0	0	1

TABLE 5

AN EXAMPLE OF THE RESULTS OF THE Q-SORT

Characteristic	Attitude Toward Students	Presentation	Personal Attributes	Class Atmosphere	Course Mechanics	Attitude Toward Subject	Other	Total
1. Admits Mistakes			111111111 2222222 33				1	10 7 2
2. Answers questions when asked	111 22 333	1	1 2	1 22 3			111 2	9 6 4
3. Assignments are clear	1	1 22 3		2	1111111 22222 3			9 8 2
4. Believes the students respect him as an individual	2222222 333		1	1 22			1 222 3	3 12 4
5. Broadens students' interests	2222 3	111 22	2	2	1	1 2	11 2 3	7 10 2
6. Class objectives are clearly defined		1 2 3		1 3	111111111 2222 3			11 5 3
7. Consults with business firms			2			1 2 3	111111 222222222	7 11 1
8. Course is sufficiently difficult to be stimulating		1 2222		1 222 3	1 22222 33		1	4 12 3
9. Course is well structured, yet flexible		1 2	1		111111 2222222 333			8 8 3

1 - Sorted as most important; 2 - Sorted as moderately important; 3 - Sorted as least important.

TABLE 6 - ADMINISTRATOR/FACULTY QUESTIONNAIRE

The purpose of this questionnaire is to determine your opinion of the importance of each of these items in faculty evaluation and to determine what you believe students' abilities are to rate them. Please rate the scale on the left side of each page first. When rating the scale on the right side of the page, ignore, cover up, or fold under your ratings for the left scale.

I feel the importance of this item in evaluating faculty is							The professor	I feel a student's ability to rate this item accurate						
Very High						Very Low		Very High						Very Low
1	2	3	4	5	6	7		1	2	3	4	5	6	7
							Gives personal attention to student work.							
							Gives students new viewpoints--broadens their interests.							
							Is self-controlled and patient.							
							Does not permit domination of class discussion by few students							
							Gives clear assignments.							
							Evidences a broad, accurate, up-to-date knowledge of the subject.							
							Consults with business firms.							
							Is interested in and sensitive to student needs and fills them.							
							Includes in lecture out-of-text materials.							
							Recognizes his own limitations.							
							Encourages open communication.							
							Defines class objectives clearly.							
							Has a lively interest in and enjoys teaching.							
							Uses class time efficiently.							
							Respects student opinion and is tolerant to student disagreement.							
							Interprets abstract ideas and theories clearly.							
							Has a wide range of interests.							
							Structures the course, yet is flexible.							
							Is enthusiastic about the subject.							

MORE . . .

I feel the importance of this item in evaluating faculty is Very High 1 2 3 4 5 6 7 Very Low	The professor . . .	I feel a student's ability to rate this item accurately Very High 1 2 3 4 5 6 7 Very Low
	Motivates students to do their best work.	
	Is willing to help students in and out of the classroom.	
	Relates information to other fields.	
	Has a sense of humor.	
	Gives a reasonable workload.	
	Is professional, yet friendly.	
	Encourages students to think for themselves.	
	Stresses important materials.	
	Admits mistakes.	
	Gives tests which cover the materials presented in class and in the text or related readings.	
	Provides useful feedback on student progress.	
	Supports ideas with examples, comparisons, and facts.	
	Is concerned about fair evaluation of students.	
	Is well prepared for the day's lecture.	
	Is interesting as a lecturer.	

Please fill in the following information about yourself:

Rank _____ In what year did you receive your highest degree _____

Years of teaching at SDSC _____ Other _____

Circle the phrase that would best describe your impression of student ratings:

Very Useful Moderately Useful Not very Useful Not Useful at All

Which one of the following levels of teaching do you enjoy the most?

Lower Division Upper Division Graduate No Preference

Thank you.

TABLE 7

COMPARATIVE RANKINGS, MEANS, AND STANDARD DEVIATIONS FOR EACH OF THE CHARACTERISTICS RATED ON THE IMPORTANCE CRITERION BY ADMINISTRATORS, FACULTY, AND STUDENTS

Characteristic	Administrators			Faculty			Students		
	Rank	Mean	Sigma	Rank	Mean	Sigma	Rank	Mean	Sigma
Is concerned about fair evaluation of students	11	3.00	1.85	1	1.74	0.86	3	1.95	1.05
Encourages students to think for themselves	3	2.67	1.73	2	1.74	1.14	10	2.08	1.08
Evidences a broad, accurate, up-to-date knowledge of the subject	9	2.89	2.42	3	1.77	1.10	1	1.68	1.06
Gives students new viewpoints--broadens their interests	18	3.44	2.51	4	1.89	1.20	17	2.24	1.25
Encourages open communication	7	2.88	2.03	5	2.03	1.14	11	2.10	1.10
Interprets abstract ideas and theories clearly	2	2.63	2.20	6	2.06	1.23	16	2.34	1.25
Supports ideas with examples, comparisons, and facts	10	3.00	1.80	7	2.09	1.16	12	2.11	1.05
Is willing to help students in and out of the classroom	16	3.33	1.66	8	2.12	1.00	9	2.06	1.11
Includes in lecture out-of-text materials	30	4.00	1.58	9	2.15	1.02	30	2.82	1.39
Is enthusiastic about the subject	5	2.78	2.33	10	2.15	1.31	5	2.03	1.10
Is well prepared for the day's lecture	13	3.13	2.03	11	2.15	1.35	7	2.05	1.15
Has a lively interest in and enjoys teaching	6	2.78	2.33	12	2.21	1.45	8	2.05	1.22
Motivates students to do their best work	1	2.25	1.29	13	2.27	0.99	25	2.43	1.23
Respects student opinions and is tolerant to student disagreement	12	3.11	2.15	14	2.32	1.15	15	2.15	1.24
Recognizes his own limitations	24	3.67	2.24	15	2.35	0.88	27	2.61	1.39
Uses class time efficiently	15	3.29	2.22	16	2.41	1.05	21	2.37	1.23
Provides useful feedback on student progress	4	2.78	1.86	17	2.50	1.14	14	2.14	1.08
Stresses important materials	8	2.89	1.90	18	2.50	1.16	13	2.12	1.02
Gives personal attention to student work	27	3.89	1.90	19	2.59	1.05	18	2.26	1.22
Relates information to other fields	17	3.44	1.81	20	2.53	1.35	31	2.85	1.28
Structures the course, yet is flexible	22	3.63	1.99	21	2.56	1.10	23	2.41	1.17
Gives clear assignments	14	3.25	2.12	22	2.65	1.37	4	2.01	1.13
Defines class objectives clearly	23	3.67	2.24	23	2.68	1.49	6	2.03	1.08
Gives tests which cover the materials presented in class and in the text or related readings	25	3.67	2.29	24	2.74	1.46	19	2.26	1.41
Is interesting as a lecturer	19	3.50	2.20	25	2.74	1.56	2	1.93	1.10
Is interested in and sensitive to student needs and fills them	20	3.56	2.19	26	2.79	1.27	24	2.43	1.18
Admits mistakes	28	3.89	2.03	27	2.91	1.68	20	2.36	1.38
Has a sense of humor	34	5.38	1.85	28	3.12	1.79	32	2.90	1.57
Does not permit domination of class discussions by a few students	26	3.89	1.77	29	3.27	1.40	33	2.99	1.43
Is professional, yet friendly	21	3.57	1.90	30	3.29	1.43	26	2.60	1.32
Is self-controlled and patient	29	3.89	2.26	31	3.38	1.37	29	2.69	1.41
Gives a reasonable workload	31	4.62	1.60	32	3.46	1.37	22	2.40	1.28
Has a wide range of interests	33	4.89	1.90	33	3.56	1.94	28	2.68	1.60
Consults with business firms	32	4.78	2.22	34	4.44	1.52	34	4.03	1.78

Numbers of Respondents: Administrators = 9; Faculty = 34; Students = 356.

TABLE 8

ITEMS WHOSE MEAN RATINGS WERE SIGNIFICANTLY DIFFERENT ON THE IMPORTANCE CRITERION BETWEEN FACULTY AND ADMINISTRATORS, FACULTY AND STUDENTS, ADMINISTRATORS AND STUDENTS

Item	Column 1 Faculty/ Administrators t Statistic[a]	Column 2 Faculty/ Students t Statistic[a]	Column 3 Administrators/ Students t Statistic[a]
Gives a reasonable workload	+2.20	-4.57	-5.12
Includes in lectures out-of-text materials	+4.30	-2.74	-2.52
Encourages students to think for themselves	+1.95	+1.76	
Has a sense of humor	+3.35		-4.96
Is concerned about fair evaluation of students	+2.99		-2.90
Gives personal attention to student work	+2.87		-3.88
Is willing to help students in and out of class	+2.79		-3.35
Recognizes his own limitations	+2.77		-2.23
Gives students new viewpoints	+2.70		-2.75
Structures the course, yet is flexible	+2.14		-3.02
Evidences a broad, accurate, up-to-date knowledge of the subject	+1.06		-3.20
Supports ideas with examples, comparisons, and facts	+1.85		-2.46
Has a wide range of interests	+1.84		-2.22
Uses class time efficiently	+1.72		-2.17
Is well prepared for the day's lecture	+1.73		-2.70
Is interesting as a lecturer		-3.88	-4.07
Defines class objectives clearly		-3.22	-4.35
Gives clear assignments		-2.98	-3.06
Is professional, yet friendly		-2.88	-2.14
Is self-controlled and patient		+2.74	-2.48
Admits mistakes		-2.20	-3.26
Stresses important materials		-2.03	-2.16
Gives tests that cover the materials		-1.86	-2.89
Provides useful feedback on student progress		-1.83	-1.70
Is interested in and sensitive to student needs		-1.72	-2.75
Respects student opinion			-2.23
Encourages open communication			-2.04
Is enthusiastic about the subject			-1.94
Does not permit domination of class discussions			-1.85

Note: Cols. 1 and 2: + = Higher mean rating by Faculty
Col. 3: + = Higher mean rating by Administratrators

[a]Significant at $p < .05$.

TABLE 9

COMPARATIVE RANKINGS, MEANS, AND STANDARD DEVIATIONS FOR EACH OF THE CHARACTERISTICS RATED ON THE ABILITY TO RATE CRITERION BY ADMINISTRATORS, FACULTY, AND STUDENTS

Characteristic	Administrators			Faculty			Students		
	Rank	Mean	Sigma	Rank	Mean	Sigma	Rank	Mean	Sigma
Is concerned about fair evaluation of students	30	4.22	1.72	20	2.97	1.43	20	2.67	1.36
Encourages students to think for themselves	19	3.11	1.90	16	2.71	1.14	17	2.56	1.23
Evidences a broad, accurate, up-to-date knowledge of the subject	32	4.89	1.54	32	4.30	1.66	31	2.96	1.42
Gives students new viewpoints—broadens their interests	24	3.50	1.69	18	2.79	1.27	21	2.68	1.29
Encourages open communication	7	2.25	0.89	8	2.38	1.18	7	2.32	1.11
Interprets abstract ideas and theories clearly	27	3.88	2.03	27	3.53	1.35	29	2.91	1.40
Supports ideas with examples, comparisons, and facts	11	2.56	1.13	3	2.21	1.10	9	2.38	1.19
Is willing to help students in and out of the classroom	4	2.22	1.09	4	2.29	1.09	11	2.44	1.30
Includes in lecture out-of-text materials	20	3.22	1.99	17	2.77	1.71	27	2.78	1.35
Is enthusiastic about the subject	1	1.63	0.74	6	2.32	1.47	6	2.30	1.35
Is well prepared for the day's lecture	14	2.75	1.17	24	3.29	1.38	14	2.50	1.34
Has a lively interest in and enjoys teaching	12	2.63	1.19	13	2.56	1.21	22	2.69	1.54
Motivates students to do their best work	3	2.00	0.93	25	3.29	1.49	26	2.78	1.27
Respects student opinions and is tolerant to student disagreement	5	2.22	1.20	9	2.41	1.08	8	2.37	1.22
Recognizes his own limitations	31	4.56	2.24	33	4.39	1.79	32	3.57	1.64
Uses class time efficiently	25	3.67	1.58	28	3.56	1.13	15	2.52	1.28
Provides useful feedback on student progress	8	2.33	1.41	7	2.35	1.10	5	2.27	1.22
Stresses important materials	33	5.11	1.62	29	3.74	1.48	19	2.66	1.28
Gives personal attention to student work	17	3.00	1.85	14	2.56	1.38	16	2.55	1.31
Relates information to other fields	26	3.75	1.28	22	3.06	1.18	30	2.92	1.26
Structures the course, yet is flexible	22	3.38	1.85	26	3.44	1.28	24	2.70	1.23
Gives clear assignments	10	2.50	1.60	11	2.47	1.08	1	2.16	1.14
Defines class objectives clearly	15	2.78	1.86	21	3.00	1.26	3	2.16	1.14
Gives tests which cover the materials presented in class and in the text or related readings	6	2.22	1.39	10	2.41	1.10	4	2.20	1.17
Is interesting as a lecturer	2	1.88	1.73	2	2.15	1.13	2	2.05	1.19
Is interested in and sensitive to student needs and fills them	21	3.38	1.77	23	3.27	1.42	28	2.88	1.35
Admits mistakes	18	3.11	1.27	15	2.70	1.13	25	2.75	1.49
Has a sense of humor	9	2.38	1.41	1	2.15	0.89	13	2.48	1.34
Does not permit domination of class discussions by a few students	16	2.89	1.69	5	2.29	1.24	12	2.48	1.26
Is professional, yet friendly	23	3.43	2.15	19	2.88	0.84	18	2.61	1.18
Is self-controlled and patient	13	2.67	1.66	12	2.56	1.05	23	2.69	1.37
Gives a reasonable workload	29	4.13	2.17	30	4.15	1.64	10	2.39	1.20
Has a wide range of interests	28	4.11	2.26	31	4.18	1.39	33	3.89	1.73
Consults with business firms	34	5.89	1.54	34	5.59	1.46	34	4.67	1.82

Number of Respondents: Administrators = 9; Faculty = 34; Students = 356.

TABLE 10

ITEMS WHOSE MEAN RATINGS WERE SIGNIFICANTLY DIFFERENT ON THE ABILITY TO RATE CRITERION BETWEEN FACULTY AND ADMINISTRATORS, FACULTY AND STUDENTS, ADMINISTRATORS AND STUDENTS

Item	Column 1 Faculty/ Administrators t Statistic[a]	Column 2 Faculty/ Students t Statistic[a]	Column 3 Administrators/ Students t Statistic[a]
Stresses important materials	+2.43	+4.63	+5.60
Motivates students to do their best work	-2.47	+2.24	-1.82
Is concerned about fair evaluation of students	+2.25		+3.37
Gives reasonable workload		+7.98	+4.20
Evidences a broad, accurate, up-to-date knowledge of the subject		-5.14	+4.01
Uses class time efficiently		+4.59	+2.65
Consults with business firms		+2.85	+1.99
Recognizes his own limitations		+2.75	+1.77
Interprets abstract ideas and theories clearly		+2.47	+2.02
Defines class objectives clearly		+4.07	
Structures the course, yet is flexible		+3.34	
Is well prepared for the day's lecture		+3.28	
Gives clear assignments		+2.28	
If professional, yet friendly			+1.99
Relates information to other fields			+1.96
Gives students new viewpoints, broadens their interests			+1.87

Note: Col. 1: + = Higher mean rating by Faculty
Cols. 2 and 3: + = Higher mean rating by Students

[a]Significant at $p < .05$.

TABLE 11

FACTOR GROUPINGS--Q SORT, FACTOR ANALYSES

Item	Q Sort	Student Factor Analysis Loading	Faculty/Administrator Factor Analysis Loading
Factor I - Attitude Toward Students			
Gives personal attention to student work	X	0.68	0.78
Is interested in and sensitive to student needs and fills them	X	0.62	0.89
Is willing to help students in and out of the classroom	X	0.50	0.59
Respects student opinion and is tolerant to student disagreement	X	0.54	--
Is concerned about fair evaluation of students	X	0.51	--
Provides useful feedback on student progress	X	0.48	--
Encourages students to think for themselves	X	--	--
Gives students new viewpoints--broadens their interests	--	0.58	--
Encourages open communication	--	0.49	--
Motivates students to do their best work	--	--	0.59
Factor II - Attitude Toward Subject			
Has a lively interest in and enjoys teaching	X	0.61	0.82
Is enthusiastic about the subject	X	0.60	0.76
Evidences a broad, accurate, up-to-date knowledge of the subject	X	--	--
Has a wide range of interests	--	0.59	--
Factor III - Personality Attributes			
Has a sense of humor	X	0.64	0.77
Admits mistakes	X	0.66	0.58
Is self-controlled and patient	X	0.40	--
Recognizes his own limitations	X	0.43	--
Has a wide range of interests	X	--	--
Is professional, yet friendly	--	0.66	0.72
Gives a reasonable workload	--	0.57	0.81
Structures the course, yet is flexible	--	0.38	--
Is interesting as a lecturer	--	--	0.56
Is well prepared for the day's lecture	--	--	0.41
Factor IV - Course Mechanics			
Gives clear assignments	X	0.63	0.71
Defines class objectives clearly	X	0.73	0.83
Gives tests which cover materials presented in class and in the text or readings	X	0.55	--
Structures course, yet is flexible	X	--	--
Gives a reasonable workload	X	--	--
Uses class time efficiently	--	0.65	0.50
Evidences a broad, accurate, up-to-date knowledge of the subject	--	0.45	--
Stresses important materials	--	--	0.52

TABLE 11 (Continued)

Item	Q Sort	Student Factor Analysis Loading	Faculty/Administrator Factor Analysis Loading
Factor V - Presentation			
Supports ideas with examples, comparisons, and facts	X	0.39	0.67
Is interesting as a lecturer	X	0.56	--
Is well prepared for the day's lecture	X	0.64	--
Stresses important material	X	0.56	--
Gives students new viewpoints--broadens their interests	X	--	0.57
Interprets abstract ideas and theories clearly	X	--	0.59
Includes in lecture out-of-text materials	X	--	0.52
Relates information to other fields	X	--	0.74
Motivates students to do their best work	--	0.59	--
Encourages students to think for themselves	--	0.43	0.60
Encourages open communication	--	--	0.79
Respects student opinion and is tolerant to student disagreement	--	--	0.62
Evidences a broad, accurate, up-to-date, knowledge of the subject	--	--	0.56
Recognizes his own limitations	--	--	0.73
Factor VI - Class Atmosphere			
Does not permit domination of class discussion by a few students	X	0.68	0.73
Encourages open communication	X	--	--
Consults with business firms	--	0.50	--
Is self-controlled and patient	--	--	0.74
Factor VII - Course Organization			
Structures the course, yet is flexible	--	--	0.75
Gives tests which cover materials presented in class and in the text or readings	--	--	0.61
Provides useful feedback on student progress	--	--	0.74
Is concerned with fair evaluation of students	--	--	0.68
Factors VIII - Other, Communication, and Outer Orientation			
Consults with business firms	X	--	0.89
Motivates students to do their best work	X	--	--
Is professional, yet friendly	X	--	--
Uses class time efficiently	X	--	--
Includes in lecture out-of-text materials	--	0.76	--
Relates information to other fields	--	0.48	--
Interprets abstract ideas and theories clearly	--	0.62	--
Has a wide range of interests	--	--	0.71

TABLE 12

CHARACTERISTICS TO BE RATED--TOP TEN ITEMS BASED ON IMPORTANCE ONLY

Characteristic	Ranking		
	Administrators	Faculty	Students
1. Evidences a broad, accurate, up-to-date knowledge of the subject	9	3	1
2. Encourages students to think for themselves	3	2	10
3. Is enthusiastic about the subject	5	10	5
4. Encourages open communication	7	5	
5. Interprets abstract ideas and theories clearly	2	6	
6. Supports ideas with examples, comparisons, and facts	10	7	
7. Is concerned about fair evaluation of students		1	3
8. Is willing to help students in and out of the classroom		8	9
9. Has a lively interest in and enjoys teaching	6		8
*10. Motivates students to do their best work	1		
*11. Provides useful feedback on student progress	4		
*12. Stresses important materials	8		
*13. Gives students new viewpoints--broadens their interests		4	
*14. Includes in lecture out-of-text materials		9	
*15. Is interesting as a lecturer			2
*16. Gives clear assignments			4
*17. Defines class objectives clearly			6
*18. Is well prepared for the day's lecture			7

*Item is unique to one user group.